

AMENDMENTS TO THE CLAIMS

Claims 1-27 are pending in the instant application. Claims 2-8, 10-14, 16-23, and 25 have been amended. New claims 28-43 have been added. The Applicant requests reconsideration of the claims in view of the following amendments reflected in the listing of claims.

Listing of claims:

1. (Previously Presented) A multi-mode wireless communication device, comprising:

a host baseband processor configured to operate in accordance with a first wireless communications protocol of a first wireless communications system; and

a baseband co-processor configured to operate in accordance with a second wireless communications protocol of a second wireless communications system,

wherein said host baseband processor enables timing synchronization between said first and second wireless communications systems on the basis of timing information transferred to said host baseband processor from said baseband co-processor.

2. (Currently Amended) The multi-mode communications device of claim 1, wherein said host baseband processor comprises circuitry for issuing, from said host baseband processor, a timer capture interrupt to said baseband co-processor during a predetermined timer phase of said first wireless communications system.

3. (Currently Amended) The multi-mode communication device of claim 2, wherein said baseband co-processor is configured to provide at least one timer value pertinent to a timing state of said second wireless communications system to said host baseband processor in response to issuance of said timer capture interrupt, said host baseband processor enables determining of a timing difference between said first and second wireless communication systems based upon said predetermined timer phase and said at least one timer value.

4. (Currently Amended) The multi-mode communications device of claim 1, wherein said host baseband processor comprises circuitry for reading a current value of at least one timer maintained by said baseband co-processor consistent with said second wireless communications protocol.

5. (Currently Amended) The multi-mode communications device of claim 1, wherein said host baseband processor comprises a higher-layer processing

module and a modem for interfacing with said first wireless communication system, said higher-layer processing module being operatively coupled to said modem and to a baseband interface of said baseband co-processor.

6. (Currently Amended) The multi-mode communications device of claim 3, wherein said second wireless communications protocol comprises WCDMA, said baseband co-processor including first and second registers adapted to store said at least one timer value and an additional timer value pertinent to said second wireless communications protocol.

7. (Currently Amended) The multi-mode communications device of claim 6, wherein said at least one timer value corresponds to a slot counter and said additional timer value corresponds to a sample counter.

8. (Currently Amended) The multi-mode communications device of claim 1, wherein said host baseband processor comprises a higher-layer processor configured to effect higher-layer processing of information processed by said baseband co-processor.

9. (Previously Presented) A timing synchronization method, comprising:

configuring a host baseband processor of a multi-mode device to operate in accordance with a first wireless communications protocol of a first wireless communications system;

configuring a baseband co-processor of a multi-mode device to operate in accordance with a second wireless communications protocol of a second wireless communications system; and

establishing, within said device, timing synchronization between said first and second communication systems on the basis of timing information transferred to said host baseband processor from said baseband co-processor.

10. (Currently Amended) The method of claim 9₁ wherein said establishing includes issuing a timer capture interrupt to said baseband co-processor.

11. (Currently Amended) The method of claim 10₁ wherein said establishing comprises providing at least one timer value pertinent to a timing state of said second wireless communications system to said host baseband processor in response to issuance of said timer capture interrupt.

12. (Currently Amended) The method of claim 9, wherein said establishing includes reading a current value of at least one timer maintained by said baseband co-processor consistent with said second wireless communications protocol.

13. (Currently Amended) The method of claim 11, wherein said second wireless communications protocol comprises WCDMA, said establishing including storing at least one timer value and an additional timer value pertinent to an additional timing state of said second wireless communications system in first and second registers of said baseband co-processor.

14. (Currently Amended) The method of claim 9, wherein said host baseband processor is configured to effect higher-layer processing of information processed by said baseband co-processor.

15. (Previously Presented) A method for wireless communication, the method comprising:

generating within a multi-mode communication device, a timer capture interrupt during a predetermined timing phase of a first wireless communication system, wherein said multi-mode communication device communicates via a first

wireless protocol with said first wireless communication system, and said multi-mode communication device communicates via a second wireless protocol with a second wireless communication system;

storing a timer value of at least one time pertinent to operation of said second wireless communication system in response to said timer capture interrupt;

reading said timer value; and

determining a timing relationship between said first and second wireless communication systems based upon said timer value.

16. (Currently Amended) The method of claim 15₁ comprising:

storing an additional timer value of at least one other timer pertinent to operation of said second wireless communication system in response to said timer capture interrupt; and

reading said additional timer value, said timing relationship being based at least in part upon said additional timer value.

17. (Currently Amended) The method of claim 15₁ wherein one or more timers are incremented pursuant to operation of said first wireless communication

system, said determining a timing relationship including comparing at least one value of said one or more timers with said timer value.

18. (Currently Amended) The method of claim 15₁ wherein said first wireless communications system operates in accordance with a first wireless communications protocol₁ and said second wireless communications system operates in accordance with a second wireless communications protocol different from said first wireless communications protocol.

19. (Currently Amended) The method of claim 18₁ wherein said first wireless communications protocol comprises GSM₁ and said second wireless communications protocol comprises WCDMA.

20. (Currently Amended) A multi-mode wireless communication device, comprising:

a host baseband processor configured to operate in accordance with a first wireless communications protocol of a first wireless communications system; and

a baseband co-processor configured to operate in accordance with a second wireless communications protocol of a second wireless communications system,

wherein one or more of[[:]] said host baseband processor, said baseband co-processor and/or additional circuitry, enables timing synchronization between said first and second wireless communications systems on the basis of timing information transferred to said host baseband processor from said baseband co-processor.

21. (Currently Amended) The multi-mode communications device of claim 20, wherein said one or more of[[:]] said host baseband processor, said baseband co-processor and/or said additional circuitry comprises circuitry for issuing, from said host baseband processor, a timer capture interrupt to said baseband co-processor during a predetermined timer phase of said first wireless communications system.

22. (Currently Amended) The multi-mode communication device of claim 21, wherein said one or more of[[:]] said host baseband processor, said baseband co-processor and/or said additional circuitry is configured to provide at least one timer value pertinent to a timing state of said second wireless communications

system in response to issuance of said timer capture interrupt, said one or more of[:]] said host baseband processor, said baseband co-processor and/or said additional circuitry enables determining of a timing difference between said first and second wireless communication systems based upon said predetermined timer phase and said at least one timer value.

23. (Currently Amended) The multi-mode communications device of claim 21, wherein said one or more of[:]] said host baseband processor, said baseband co-processor and/or said additional circuitry comprises circuitry for reading a current value of at least one timer consistent with said second wireless communications protocol.

24. (Previously Presented) The multi-mode communications device of claim 20, wherein said host baseband processor comprises a higher-layer processing module and a modem for interfacing with said first wireless communication system, said higher-layer processing module being operatively coupled to said modem and to a baseband interface of said baseband co-processor.

25. (Currently Amended) The multi-mode communications device of claim 22, wherein said second wireless communications protocol comprises WCDMA,

said one or more of[:]] said host baseband processor, said baseband co-processor and/or said additional circuitry[[]] including first and second registers adapted to store said at least one timer value and an additional timer value pertinent to said second wireless communications protocol.

26. (Previously Presented) The multi-mode communications device of claim 25, wherein said at least one timer value corresponds to a slot counter and said additional timer value corresponds to a sample counter.

27. (Previously Presented) The multi-mode communications device of claim 20, wherein said host baseband processor comprises a higher-layer processor configured to effect higher-layer processing of information processed by said baseband co-processor.

28. (New) A multi-mode wireless communication device, comprising:

a host baseband processor configured to operate in accordance with a first wireless communications protocol of a first wireless communications system; and

a baseband co-processor configured to operate in accordance with a second wireless communications protocol of a second wireless communications system,

wherein said host baseband processor enables timing synchronization between said first and second wireless communications systems on the basis of timing information transferred to said host baseband processor from said baseband co-processor, wherein said host baseband processor comprises circuitry for issuing, from said host baseband processor, a timer capture interrupt to said baseband co-processor during a predetermined timer phase of said first wireless communications system, and wherein said baseband co-processor is configured to provide at least one timer value pertinent to a timing state of said second wireless communications system to said host baseband processor in response to issuance of said timer capture interrupt, said host baseband processor enables determining of a timing difference between said first and second wireless communication systems based upon said predetermined timer phase and said at least one timer value.

29. (New) The multi-mode communications device of claim 28, wherein said host baseband processor comprises circuitry for reading a current value of at least

one timer maintained by said baseband co-processor consistent with said second wireless communications protocol.

30. (New) The multi-mode communications device of claim 28, wherein said host baseband processor comprises a higher-layer processing module and a modem for interfacing with said first wireless communication system, said higher-layer processing module being operatively coupled to said modem and to a baseband interface of said baseband co-processor.

31. (New) The multi-mode communications device of claim 28, wherein said second wireless communications protocol comprises WCDMA, said baseband co-processor including first and second registers adapted to store said at least one timer value and an additional timer value pertinent to said second wireless communications protocol.

32. (New) The multi-mode communications device of claim 31, wherein said at least one timer value corresponds to a slot counter and said additional timer value corresponds to a sample counter.

33. (New) The multi-mode communications device of claim 28, wherein said host baseband processor comprises a higher-layer processor configured to effect higher-layer processing of information processed by said baseband co-processor.

34. (New) A timing synchronization method, comprising:

configuring a host baseband processor of a multi-mode device to operate in accordance with a first wireless communications protocol of a first wireless communications system;

configuring a baseband co-processor of a multi-mode device to operate in accordance with a second wireless communications protocol of a second wireless communications system; and

establishing, within said device, timing synchronization between said first and second communication systems on the basis of timing information transferred to said host baseband processor from said baseband co-processor, wherein said establishing includes issuing a timer capture interrupt to said baseband co-processor, and wherein said establishing comprises providing at least one timer value pertinent to a timing state of said second wireless communications system to said host baseband processor in response to issuance of said timer capture interrupt.

35. (New) The method of claim 34, wherein said establishing includes reading a current value of at least one timer maintained by said baseband co-processor consistent with said second wireless communications protocol.

36. (New) The method of claim 34, wherein said second wireless communications protocol comprises WCDMA, said establishing including storing at least one timer value and an additional timer value pertinent to an additional timing state of said second wireless communications system in first and second registers of said baseband co-processor.

37. (New) The method of claim 34, wherein said host baseband processor is configured to effect higher-layer processing of information processed by said baseband co-processor.

38. (New) A multi-mode wireless communication device, comprising:

a host baseband processor configured to operate in accordance with a first wireless communications protocol of a first wireless communications system; and

a baseband co-processor configured to operate in accordance with a second wireless communications protocol of a second wireless communications system,

wherein one or more of said host baseband processor, said baseband co-processor and/or additional circuitry, enables timing synchronization between said first and second wireless communications systems on the basis of timing information transferred to said host baseband processor from said baseband co-processor, wherein said one or more of: said host baseband processor, said baseband co-processor and said additional circuitry comprises circuitry for issuing, from said host baseband processor, a timer capture interrupt to said baseband co-processor during a predetermined timer phase of said first wireless communications system, and wherein said one or more of said host baseband processor, said baseband co-processor and/or said additional circuitry is configured to provide at least one timer value pertinent to a timing state of said second wireless communications system in response to issuance of said timer capture interrupt, said one or more of said host baseband processor, said baseband co-processor and/or said additional circuitry enables determining of a timing difference between said first and second wireless communication systems based upon said predetermined timer phase and said at least one timer value.

39. (New) The multi-mode communications device of claim 38, wherein said one or more of said host baseband processor, said baseband co-processor and/or said additional circuitry comprises circuitry for reading a current value of at least one timer consistent with said second wireless communications protocol.

40. (New) The multi-mode communications device of claim 38, wherein said host baseband processor comprises a higher-layer processing module and a modem for interfacing with said first wireless communication system, said higher-layer processing module being operatively coupled to said modem and to a baseband interface of said baseband co-processor.

41. (New) The multi-mode communications device of claim 38, wherein said second wireless communications protocol comprises WCDMA, said one or more of said host baseband processor, said baseband co-processor and/or said additional circuitry including first and second registers adapted to store said at least one timer value and an additional timer value pertinent to said second wireless communications protocol.

42. (New) The multi-mode communications device of claim 41, wherein said at least one timer value corresponds to a slot counter and said additional timer value corresponds to a sample counter.

43. (New) The multi-mode communications device of claim 38, wherein said host baseband processor comprises a higher-layer processor configured to effect higher-layer processing of information processed by said baseband co-processor.